characteristics in the final product and hence the two inventions can be distinguished from one another. For example, the composition of the present invention is comprised largely of an acidic concentrate in addition to an alkali concentrate (see claim 29). The specific mixture of these components achieves a number of characteristic properties such as a neutral pH, biodegradability and non-toxicity. Hence, not only is the product an effective fire retardant, it also minimizes or prevents any damage from being sustained by the surrounding environment in which it is used and also by the user.

However, contrary to the present invention, Mevel states (col. 1, line 41) that the object of his invention is to provide "effective fire extinguishing solutions based on potassium acetate." It is clearly stated that the essential component used in the solutions is potassium acetate. Although it has not been clearly disclosed in Mevel, potassium acetate is known to possess a pH value of 9.75, which is significantly basic. Hence, the composition outlined by Mevel is essentially an alkali solution with the pH range specified as 7.5-8.5. It is common knowledge that alkaline solutions can often be caustic hence, the basicity of the solution may cause some adverse reaction if it was to come in contact with the skin of a user. This is considerably different to the neutral pH disclosed in the present invention, which is further disclosed as being harmless and non-toxic.

Mevel further states (col. 1, line 61) that the effectiveness of the solution is dependent on the potassium acetate concentration. Increasing the concentration does not present any further improvement in the fire extinguishing abilities of the solution, however "the risk of precipitation reappears even though the pH is kept within the abovementioned limits". To reiterate, Mevel is effectively stating that his invention is limited to pH range of 7.5-8.5. The invention will only function effectively in alkaline conditions. Again, this differs significantly from the properties of the present invention.

Furthermore, the applicants respectfully disagree with the examiner's objection with regards to the insignificance of the pH range disclosed. The composition disclosed in claim 28, is largely comprised of an acidic concentrate, which effectively achieves the pH range of 6.5-7.0. The pH range disclosed in Mevel is 7.5-8.5, which is specific and significant with relation to the chemical components used in his invention. Mevel discloses (col. 1, line 57) that it is preferable for the solution to possess a pH ranging from 7.5-8.5, as the alkaline conditions promote the fire extinguishing properties of his invention. Below the specified pH range however, granted the solution is less corrosive the effectiveness of the solution to extinguish fires is significantly compromised, reiterating the need for the alkaline conditions in order for the product to work successfully.

It is important to consider pH sensitivity and the different chemistry involved in both inventions. The pH range specified by Mevel is specific to the components in the solution and significant to the effectiveness of the product. The product and its functionality, is highly dependent on the presence of the alkali salt, potassium acetate, within the composition and the maintenance of the alkaline conditions. Hence, the same argument can be applied to the present invention. The neutral pH is significant to the chemical components of the composition and dictates the overall properties and functionality of the product. The neutrality is essentially the property that renders the product harmless and non-toxic to the user and the surrounding environment in which it is applied. The use of the organic acid as one of the main components is advantageous as the acid itself is readily and naturally degradable and also it forms a salt, which possesses endothermic properties sufficient for the purpose of a fire retardant. The chemical reactions involved in the production of a basic or alkaline salt is considerably different to that required to produce a neutral composition. This is common acid-base chemistry and also common knowledge. Given that the chemistry involved in each invention is fundamentally different, it is again important to note the importance of pH in acid-base chemistry. The slightest difference in pH can achieve significantly different results. In this particular case, the different chemistries involved in both Mevel and present invention, has obtained

products with significantly different properties. Hence, the two inventions can clearly be distinguished from one another.

Furthermore, the examiner has stated that although the ranges do not overlap with one another, a person of ordinary skill in the art would expect the products to possess the same properties. Again, with regards to the chemistry involved, as mentioned above, pH sensitivity can have significant effects on the chemical behavior and properties of the overall product, effectively distinguishing the present invention from that disclosed in Mevel.

Also, Mevel discloses (col. 1, line 58) that "pH's lower than 8.5 are preferred so as to obtain solutions that are less corrosive and less sensitive to wetting agents." This is somewhat of an ambiguous statement. Firstly, as previously mentioned, Mevel has stated (col. 1, line 57) that the preferable pH range is 7.5-8.5. Simply stating that "pH's lower than 8.5" does not clearly disclose to a reader the correct pH that should be used when considering the formulation of the solutions. The pH of the solutions is a particularly important factor, as previously discussed, and so this information should be clarified to the reader. Again, to reiterate the significance of the pH, Mevel has disclosed that his invention relies heavily upon the use of potassium acetate, an alkaline salt. Therefore, to state that "pH's lower than 8.5 are preferred" is somewhat misleading, as it can be interpreted as solutions with an inclination

towards acidic pH values, and this clearly cannot be applied to Mevel's the invention, as potassium acetate is significantly basic in pH.

Contrary to the present invention, Mevel discloses that the solutions obtained at a lower pH "are less corrosive" which is indeed true as it is known chemical knowledge. However, Mevel's statement suggests that a pH adjustment is required in order to obtain this desired property. Also, the solutions obtained are only described as being "less corrosive", which suggests that the corrosiveness has only been reduced rather than eliminated. This is not unexpected as the Mevel has stated that the invention is only effective due to its alkaline nature and it is known that alkaline solutions possess some corrosive and caustic effects. Therefore, as the solutions still retain some corrosive property, the solution could in fact cause some harm to the user or damage to the environment in which it is used. The neutrality of the present invention is advantageous, as it ensures that the pH does not require adjustment to achieve the non-corrosive property. The components and the manner in which they are combined result in a neutral, non-corrosive product, subsequently rendering the retardant safe to use, harmless to both the user and the surrounding environment.

With respect to claim 29, the specific volumes of the acidic concentrate to be used in the production of the fire retardant are listed as the addition of the acidic concentrate is an essential component of the invention. The acidic concentrate effectively achieves the specified pH

range, which optimizes the quality and function of the fire retardant. Hence, the applicants respectfully disagree with the examiner's comment that it would be obvious to a person of ordinary skill in the art to change the amount of acidic concentrate used. Again, as previously mentioned, Mevel discloses the use of potassium acetate as a main component of his particular composition, whereas the present invention largely utilizes an acidic concentrate. The fundamental chemistries between the two inventions are different, basic chemistry versus acidic chemistry and hence achieve two very different products. Therefore, despite a person of ordinary skill in the art possessing Mevel's documentation, the volumes of acidic concentrate required to achieve the product outlined in the present invention, would not be obvious. There are certainly similar components used in either invention, however Mevel largely teaches the use of an alkaline salt and discloses the relative volumes required to achieve an alkaline product, which is significantly different to the chemistry involved in the present invention.

The examiner has rejected claims 30-36 under 35 U.S.C. 103(a) as being unpatentable over Mevel and in further view of Berger.

With respect to claim 30, citric acid is used in a blend with acetic acid. Although Berger also discloses the use of citric acid, the overall combination of the chemical components obtains a significantly different chemical compound to that disclosed in either Mevel or Berger. The addition of citric acid to acetic acid not only further enhances the

extinguishing abilities of the fire retardant, but it also serves to act as a stabilizer. Citric acid is an effective natural preservative and as it is a natural organic acid, the overall biodegradability of the product is still maintained.

Regarding claim 31, the examiner has stated that although Mevel does not teach the specific composition of the alkali concentrate, a person of ordinary skill in the art would be able to identify the need to optimize the weight percentage of the alkali. However, in the present invention, the alkali concentrate is again specific with relation to the other components within the mixture.

The examiner's prior art rejections should be withdrawn and the application allowed.

The examiner is requested to act on the Request to Correct Inventorship, filed September 20, 2007.

Respectfully submitted,

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